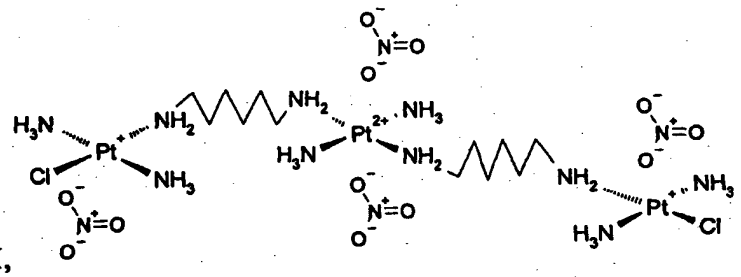
CLAIMS

1. Solid Lipid Nanoparticles of platinum compounds.

2. Solid Lipid Nanoparticles according to claim 1 wherein the platinum compounds are platinum complexes.

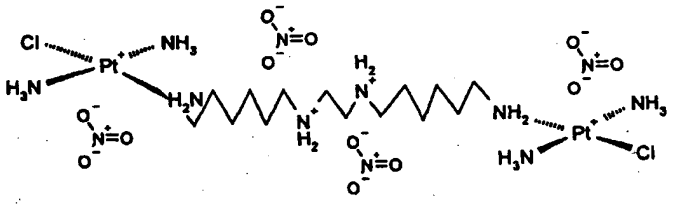
3. Solid Lipid Nanoparticles according to claim 2, wherein the platinum complex is selected from trans-{bis[trans(diammine)(chloro)platinum (II)(μ-1,6- hexanediamine)]}diammineplatinum tetranitrate salt of formula I



I,

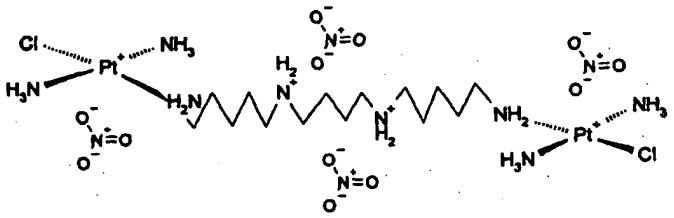
Formula I

bis{trans(diammine)(chloro)platinum(II)}μ-(1,16-diamino-7,10-diazahexadecane-N1,N16) dinitrate salt. $2HNO_3$ of formula II,



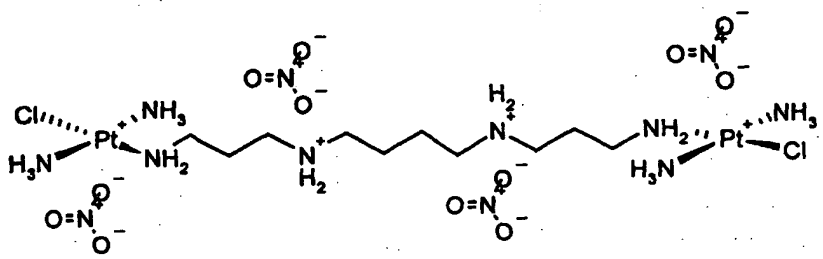
Formula II

bis{trans(diammine)(chloro)platinum(II)}μ-(1,16-diamino-6,11-diazahexadecane-N1,N16) dinitrate salt. $2HNO_3$ of formula III,



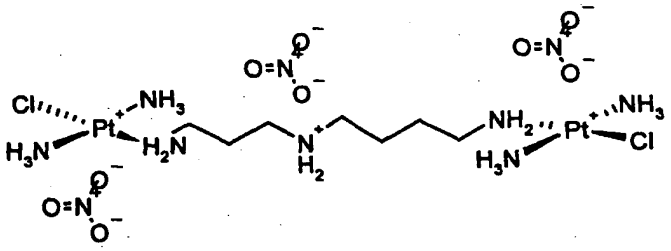
Formula III

bis{trans(diammine)(chloro)platinum(II)}-μ-(1,12-diamino-4,9-diazadodecane-N_1,N_{12}) dinitrate salt. $2HNO_3$ of formula IV,



Formula IV

bis{trans(diammine)(chloro)platinum (II)}-μ-(1,8-diamino-4-azaoctane-N^1,N^8) dinitrate salt. HNO_3 of formula V,



Formula V

4. A process for the preparation of Solid Lipid Nanoparticles of claims 1-3, comprising:

a) preparing a first microemulsion by mixing a molten lipid, a surfactant, and optionally a co-surfactant and the platinum compound acqueous solution;

b) preparing a solution by mixing a surfactant and optionally a co-surfactant in water, heating to complete solution, preferably at the same melting temperature of the lipid used in a) and adding a co-surfactant;

c) dispersing the microemulsion obtained in a) into the solution obtained in b) obtaining a multiple microemulsion c);

d) dispersing the microemulsion obtained in c) in aqueous medium at a

temperature ranging from 0.5°C to 4°C obtaining a dispersion of solid lipid microspheres;

e) washing with aqueous medium through ultrafiltration the obtained lipid microspheres obtained in d) and lyophilizing, optionally in the presence of a bulking agent and of a cryoprotecting agent.

5. Pharmaceutical compositions comprising the solid lipid nanoparticles of claims 1-3.

6. A method of treating patients affected by cancer sensitive to platinum complexes which comprises administering to said patients a therapeutically effective amount of the solid lipid nanoparticles of claims 1-3.